

## **Montana Board of Oil and Gas Conservation Environmental Assessment**

**Operator:** Southwestern Energy Production Co.  
**Well Name/Number:** Bedwell 33-52 1-1H  
**Location:** NW NE Section 1 T33N R52E  
**County:** Sheridan, MT; Field (or Wildcat) Wildcat

### **Air Quality**

(possible concerns)

Long drilling time: No, 15-25 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick rig to drill a single lateral horizontal Bakken Formation well test, 12,100' MD/8200' TVD.

Possible H<sub>2</sub>S gas production: Yes possible from Mississippian Formations.

In/near Class I air quality area: Yes Class I air quality area nearby, Fort Peck Indian Reservation. Well location is just outside of the boundary of the Fort Peck Indian Reservation.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: Well is a single lateral horizontal Bakken Formation well test, 12,100' MD/8200' TVD. If there are existing pipeline for natural gas in the area then gas must be tied into system or if no gathering system nearby associated gas can be flared under Board Rule 36.22.1220.

### **Water Quality**

(possible concerns)

Salt/oil based mud: Yes, saturated salt drilling fluids will be used from base of surface casing (1400') to intermediate string casing total depth. Horizontal laterals will be drilled with brine water. Surface casing hole will be drilled with freshwater and freshwater mud system.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Wolf Creek, about 1/8 of a mile to the west from this location.

Water well contamination: Closest stock and domestic water wells are about 5/8 of a mile to the northwest and about 7/8 of a mile to the north northwest from this location, depth of these wells range from 14' to 253'. Significantly shallower than the surface casing setting depth of 1400'. All other wells are 1 mile or further away in any direction. Surface casing will be set to 1400' and cemented to surface to protect ground waters.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No, Class I stream drainages.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: \_\_\_\_\_

Comments: 1400' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and operational BOP equipment will prevent any problems.

## Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None to be crossed.

High erosion potential: No, location will require a moderate cut of up to 17.5' and small fill, up to 4.5', required.

Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of wellsite will be reclaimed.

Unusually large wellsite: No, large well site 405'X425'

Damage to improvements: Slight, surface use is cultivated fields.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☒ Other Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28)

Comments: Will use existing county gravel road, Bolster Road. About 450' of new access road will be built into this location from the existing county gravel road, Bolster Road. Cuttings will be buried in the lined reserve pit. Drilling fluids will be hauled to a commercial Class II SWD. Completion fluids will be removed and hauled to commercial Class II SWD. The lined reserve pit will be backfilled with subsoil after all free liquids have been removed and allowed to dry. No concerns.

## Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 3/8 of a mile to the south, about 3/8 of a mile to the southeast, about 1/2 of a mile to the northwest and about 1/2 of a mile to the north from this location.

Possibility of H2S: Yes possible H2S from Mississippian Formations.

Size of rig/length of drilling time: Triple drilling rig 15 to 25 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☒ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other \_\_\_\_\_

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems. Sufficient distance between location and buildings noise should not be a problem.

## Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered are the Whooping Crane and Piping Plover. Candidate species is the Sprague's Pipit. NH Tracker website lists four (4) species of concern: Baird's Sparrow, Le Conte's Sparrow, Sprague's Pipit and Chestnut-collar Longspur.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: \_\_\_\_\_

Comments: Private surface cultivated lands. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

### Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: \_\_\_\_\_

Comments: Private surface cultivated lands. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

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### Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: Wildcat well. No concerns.

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### Remarks or Special Concerns for this site

To drill a single lateral horizontal Bakken Formation well test, 12,100' MD/8200' TVD, at this location.

### Summary: Evaluation of Impacts and Cumulative effects

Short term impacts expected, no long term impacts anticipated.

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I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki  
(title:) Chief Field Inspector

Date: May 26, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center GWIC  
website

(Name and Agency)

Sheridan County water wells

(subject discussed)

May 26, 2012

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA  
COUNTIES, Sheridan County

(subject discussed)

May 26, 2012

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T33N R52E

(subject discussed)

May 26, 2012

(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_